

Golden Valley Ranch

Aquifer Protection Permit Application

Rhodes Homes Arizona, Inc.
Kingman, Arizona

February 1, 2006





Stanley Consultants INC.

A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

February 1, 2006

Mr. Asif Majeed
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, Az. 85007

**Re: Golden Valley Ranch Interim WWTP
APP Application – Transmittal Letter**

Dear Mr. Majeed:

On behalf of Rhodes Homes Arizona (Rhodes), Stanley Consultants, Inc. (Stanley) is pleased to submit the Aquifer Protection Permit Application (APP) for the Golden Valley Ranch Interim Wastewater Treatment Plant near Kingman, Arizona. This APP has been completed in compliance with instructions provided on the application form and from information provided to Stanley by ADEQ during the pre-application meeting (headed by Mr. Matthew Hodge and Miss Sujana Attaluri) for this plant, which was held on November 30, 2005.

Please note that the letter from the CFO of Rhodes Homes is not included in this package. This letter will arrive under separate cover once Stanley receives it.

If you have any questions, please call me at 602-333-2364. Thank you for your attention.

Sincerely,

STANLEY CONSULTANTS, INC.

Bruce E. DiFrancisco, PE
Project Manager

cc: Denis Atwood, Stanley Consultants
Miss Sujana Attaluri, ADEQ
Kirk Brynjulson, Rhodes Homes Arizona

APP Application Form	1- 26
Exhibit A -- Legal Description (Per Item 8)	
Exhibit B -- Zoning Map (Per Item 16)	
Exhibit C -- Topographic and Vicinity Map (Per Item 17)	
Exhibit D -- Site Plan (Per Item 17)	
Exhibit E -- Design Report (Per Item 17)	
Exhibit F -- Summary of Discharge Activities (Per Item 17)	
Exhibit G -- BADCT Statement (Per Item 17)	
Exhibit H -- AWQS, Ambient Groundwater and DIA Statement (Per Item 17)	
Exhibit I -- Contingency Plan (Per Item 17)	
Exhibit J -- Hydrogeologic Report Statement (Per Item 17)	
Exhibit K -- Monitoring, Closure and Post-Closure Plans (Per Item 17)	
Exhibit L -- Construction Cost Opinion (Per Item 19)	
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Exhibit O -- Certificate of Conformance with Mohave County 208 Plan (Per Item 20)	
Exhibit P -- Financial Capability Demonstration Information (Per Item 23)	
Exhibit Q -- Qualifications of Design Engineer (Per Item 26)	
Exhibit R -- Qualifications of System Operator (Per Item 26)	



**INDIVIDUAL AQUIFER
PROTECTION PERMIT
(APP)
APPLICATION FORM**

Preparation & Submittal Instructions:

This package contains an individual Aquifer Protection Permit (APP) application form with check boxes for required fields of information that must be provided by the applicant. Unless otherwise noted, the boxes for the required fields must be checked and related information provided for the application to pass **Good Faith Review** by the Arizona Department of Environmental Quality (ADEQ). If the application does not meet the test for Good Faith Review, it will not be processed. All information provided in support of this application is subject to Licensing Time Frames (LTF) for a license listed in Arizona Administrative Code (A.A.C.) Title 18, Chapter 1, Article 5.

Some portions of the application require the applicant to complete checklists and provide attachments. If additional information is provided or more space is needed, please reference the page number(s) of the application where this information can be found by the permitting team. Supplemental instructions and information are provided at the rear of this document. Page 18 provides telephone numbers for the Unit Managers in the Water Permits Section. You may contact the Unit Managers with questions.

ADEQ's time for application review is subject to an hourly rate in accordance with rule A.A.C. R18-14-102. The current hourly rate for review and processing is \$61/hour up to the maximum fee/cap established in statute Arizona Revised Statute (ARS)§49-241.02. If you have questions about the maximum fee, please contact us.

☒ **Please confirm/check that you have included the following in the application:**

- ☒ 2 copies of complete Application Form and all attachments
ADEQ recommends that the applicant provide 3 copies for applications that involve both hydrologic and engineering review
- ☒ Signed Certification Statement -1 original signature required
- ☒ Initial Fee Check - \$1,000 unless otherwise negotiated
- ☒ Required Maps, Figures & Checklists
- ☒ Table of Contents – location of information required for application

Mail/Delivery of Application:

The application may be sent to ADEQ or hand delivered to the front desk. The application must be stamped in by an LTF Application Clerk in the Water Quality Division, Water Permits Section. This date-stamp is the official date of the document under Licensing Time Frames (LTF). The application (and subsequent submittals) will not be processed by ADEQ without an official LTF Application Clerk date-stamp.

ADEQ Address:

Arizona Department of Environmental Quality
Water Permits Section
Attn: LTF Application Clerk
1110 West Washington Street, Mail Code 5415B
Phoenix, Arizona 85007

Application Clerk Phone Number:

(602) 771-4633



Individual APP Application Form (Continued)

1	Facility Type	<input checked="" type="checkbox"/>	Check One
<input type="checkbox"/>	Industrial	<input checked="" type="checkbox"/>	Domestic Wastewater
<input type="checkbox"/>	Mining	<input type="checkbox"/>	Land Treatment Facility
<input type="checkbox"/>	Other (Fill In)		
<input checked="" type="checkbox"/>	Required Contact Information (A.A.C.R18-9-A201(B)(1))		
2	Facility Name		
	Facility Name Golden Valley Ranch Interim Wastewater Treatment Plant		
3	Applicant (if multiple applicants, attach supplemental pages)		
	Applicant Name Mr. Kirk Brynjulson		
	Business Name Perkins Mountain Utilities Company		
	Mailing Address 2215 Hualapai Mountain Road, Suite H		
	City	Kingman	State AZ Zip Code 86401
	Phone Number (928) 718-2210		
4	Owner (if multiple owners, attach supplemental pages)		
	Name Mr. Kirk Brynjulson		
	Business Name Perkins Mountain Utilities Company		
	Mailing Address 2215 Hualapai Mountain Road, Suite H		
	City	Kingman	State AZ Zip Code 86401
	Phone Number (928) 718-2210		
5	Facility Operator		
	Name Ray Jones		
	Business Name Aricor Water Solutions		
	Mailing Address 25213 N. 49 th Drive		
	City	Glendale	State AZ Zip Code 85310
	Phone Number (623) 341-4771		
Description of Facility			
6	<input checked="" type="checkbox"/> List Locations of All APP-Regulated Discharging Facilities (ARS§49-241(B))		
<p>Lists of discharging facilities provided by applicants in APP applications are often not all-inclusive. Please review ARS §49-241(A)(B) for a list of facilities that are regulated by the APP program. Some types of discharging facilities may require multiple permits. For example a wastewater treatment plant discharge to a dry wash requires an APP and an Arizona Pollutant Discharge Elimination System Permit (AZPDES) permit. An emergency overflow in an impoundment to a canyon that is a tributary to a stream is considered a point source discharge to a navigable water. A point source discharge to a navigable water requires both an APP and an AZPDES permit. Lagoons, ponds and impoundments are regulated under the APP program unless they are listed under exemptions found in ARS§49-250(B). A wastewater treatment plant (WWTP) is a discharging facility and the plant location should be included on the list. The discharging facility list is the foundation of the permit, and we ask that you take time to make sure it is complete.</p>			

12	<input checked="" type="checkbox"/> Check this box if consultant is authorized to act as "Agent" on behalf of Applicant
----	---

Agent/Consultant Name:	Bruce DiFrancisco				
Firm Name	Stanley Consultants, Inc.				
Mailing Address:	1661 E. Camelback Road, Suite 400				
City	Phoenix	State	AZ	Zip Code	85016
Phone Number	(602) 333-2364				

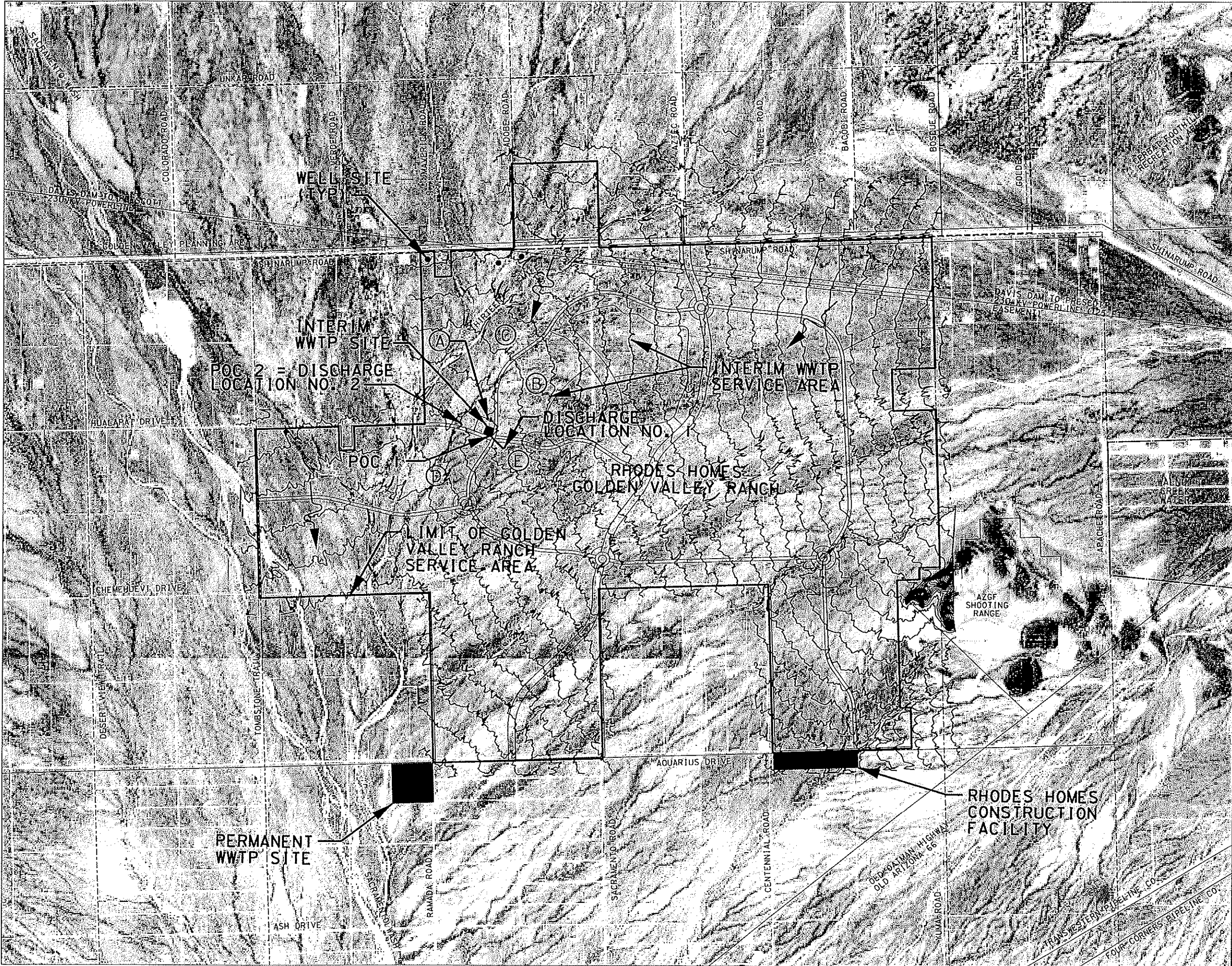
14	<input checked="" type="checkbox"/> Provide list of Other Federal & State Environmental Permits (A.A.C. R18-9-A201(B)(1)(f)) – attach supplemental table if needed
----	--

15	<input checked="" type="checkbox"/> Are you required to file a Certificate of Disclosure? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	If you answered yes to this question, please attach a certificate of disclosure per (per A.A.C. R18-9-A201(B)(2) and ARS§49-109)	
	Location of certificate in application	N/A
16	<input checked="" type="checkbox"/> Attach Evidence of Zoning Compliance (A.A.C. R18-9-A201(B)(3)) Municipal or county zoning ordinances, codes and regulations	
	Location in Application	See Exhibit B

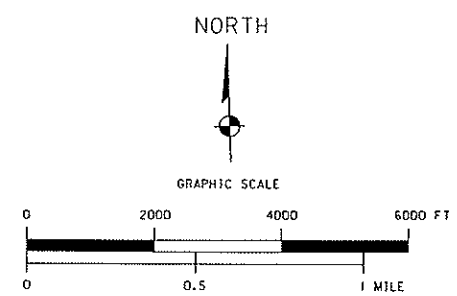


Individual APP Application Form (Continued)

17	<input checked="" type="checkbox"/> Technical Information Requirements (A.A.C. R18-9-A202)		
Attach minimum of (2) Copies of Required Technical Information – (3) copies are recommended by ADEQ to facilitate application processing			
<input checked="" type="checkbox"/>	Required Item	Pages for Information	Location in Application
<input checked="" type="checkbox"/>	Topographic Maps A)(1)	12	Exhibit C
<input checked="" type="checkbox"/>	Facility Site Plan ((A)(2))	13	Exhibit D
<input checked="" type="checkbox"/>	Design Documents & As-Built(s) ((A)(3))	13	Exhibit E
<input checked="" type="checkbox"/>	Summary of Discharge Activities ¹ ((A)(4))	8, 14	Exhibit F
<input checked="" type="checkbox"/>	BADCT Description & Statement ((A)(5))	18	Exhibit G
<input checked="" type="checkbox"/>	a) Statement (a)(i-iii)	18, 19	
<input type="checkbox"/>	b) Evaluation of Alternatives (b)	18, 19	
<input type="checkbox"/>	c) Industry Wide Economic Impact (c)	19	
<input type="checkbox"/>	d) Existing Facility Statement (d)	20	
<input checked="" type="checkbox"/>	e) Sewage Treatment BADCT (e)	19	
<input checked="" type="checkbox"/>	Proposed Point(s) of Compliance ((A)(6))	7, 16	Exhibit C
<input checked="" type="checkbox"/>	AWQS Demonstration((A)(6)(a))	16	Exhibit H
<input checked="" type="checkbox"/>	Ambient Groundwater Report (A)(6)(b) ¹	16	Exhibit H
<input checked="" type="checkbox"/>	Contingency Plan ((A)(7)) and R18-9-A204	10	Exhibit I
<input checked="" type="checkbox"/>	Hydrogeologic Study (R18-9-A202(A)(8))	16	Exhibit J
<input checked="" type="checkbox"/>	Discharge Impact Area Map/Criteria	16	Exhibit H
<input checked="" type="checkbox"/>	Detailed Proposal for All Monitoring ((A)(9))	12, 14, 19	Exhibit K
<input checked="" type="checkbox"/>	Closure and Post-closure Strategies ((A)(10))	13-14, 21	Exhibit K
<input type="checkbox"/>	Other Info (get input @ pre-application meeting)	NA	
<input type="checkbox"/>	Technical Capability (R18-9-A202(B))	NA	
¹ This information is required if ambient groundwater quality beneath the facility already exceeds Aquifer Water Quality Standards (AWQS).			
18	Seal Technical Documents as Required by Az Board of Technical Registration (A.A.C. R18-9-A202(B))		
<input checked="" type="checkbox"/>	Engineering Documents, Design Reports, Drawings		
<input type="checkbox"/>	Hydrogeologic Documents/Reports		
19	<input checked="" type="checkbox"/> Required Cost Estimates (A.A.C. R18-9-A201(B)(5))		
	Item	Estimated Cost (fill in)	Location in Application*
<input checked="" type="checkbox"/>	Construction		Exhibit L
<input checked="" type="checkbox"/>	Operation	\$7,300/month	Exhibit M
<input checked="" type="checkbox"/>	Maintenance	rolled into operations costs	Exhibit M
<input checked="" type="checkbox"/>	Closure	\$120,000	Exhibit N
<input checked="" type="checkbox"/>	Post-closure	0	N/A



- NOTES:**
1. INDEX OF ADJACENT LAND USE IDENTIFICATIONS:
A. DEDICATED 10-ACRE PARK
B. SINGLE FAMILY RESIDENTIAL
C. SINGLE FAMILY RESIDENTIAL
D. SINGLE FAMILY RESIDENTIAL
E. GOLF COURSE
 2. ALL LAND USES DESIGNATED FOR FUTURE PHASES. NO DEVELOPMENT WILL OCCUR ADJACENT TO WWTP DURING PLANT'S USEFUL LIFE
 3. INTERIM WWTP TO BE DECOMMISSIONED AND PROPERTY RETURNED TO PARK AT END OF PLANT'S USEFUL LIFE
 4. THERE ARE NO EXISTING OR PROPOSED WATER WELLS WITHIN 1/2 MILE OF THE INTERIM WWTP. THE BLACK DOTS (●) REPRESENT THE CLOSEST WELL SITES
 5. PLANT SITE LOCATION AT LATITUDE 35°08'28"N, LONGITUDE 114°12'17"W
 6. DISCHARGE LOCATION NO. 1 IS LOCATED AT THE GOLF COURSE LAKE AS SHOWN IN EXHIBIT D1
 7. THIRTEEN MILE WASH DISCHARGE LOCATION IS AT LATITUDE 35°09'27" N, LONG 114°12'26" W. THIS IS DISCHARGE LOCATION NO. 2 AND POINT OF COMPLIANCE LOCATION NO. 2



- LEGEND**
- DIRECTION OF GROUNDWATER FLOW (APPROXIMATE)
 - GOLDEN VALLEY PLANNING AREA
 - VALLEY PIONEERS WATER SERVICE AREA
 - WALNUT CREEK WATER SERVICE AREA

SET	DESCRIPTION	DATE	WWT

RHODES HOMES ARIZONA GOLDEN VALLEY RANCH

Stanley Consultants

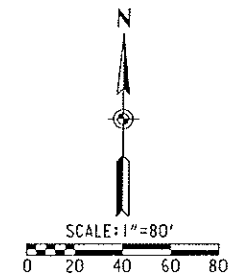
205 E. Camelback Road
Phoenix, Arizona 85016
A Stanley Group Company
Engineering, Environmental
and Construction Services Worldwide

EXHIBIT C TOPOGRAPHIC MAP

DESIGNED: DKH
DRAFTED: DKH
APPROVED: BCD

CADD FILE: c:\18448\11-cadd\01-REV-A\dwg\6M.vic.dgn SET PROJECT NO: 18448
PRINT DATE: 1/18/2006 SHEET: 1 OF 1

GOLDEN VALLEY RANCH INTERIM WWTP




- PRELIMINARY ISSUE FOR REVIEW**
NOT FOR CONSTRUCTION JANUARY, 2006

SET:	DESCRIPTION:	DATE:	RNT:

NOTICE OF EXTENDED PAYMENT PROVISION: THIS CONTRACT ALLOWS THE OWNER TO MAKE FULL PAYMENT WITHIN 30 DAYS AFTER CERTIFICATION AND APPROVAL OF BILLINGS AND ESTIMATES.

NOTICE OF EXTENDED CERTIFICATION AND APPROVAL PERIOD PROVISION: THIS CONTRACT ALLOWS THE OWNER TO CERTIFY AND APPROVE BILLINGS AND ESTIMATES WITHIN 30 DAYS AFTER RECEIVING AND ESTIMATES ARE RECEIVED FROM THE CONTRACTOR.

GOLDEN VALLEY RANCH INTERIM WASTEWATER TREATMENT PLANT



Stanley Consultants

290 East Campbell Road
Pleasanton, Arizona 84501

A Stanley Group Company
Engineering Environmental
and Construction Services Worldwide

EXHIBIT D1 - SITE PLAN

DESIGNED: DKH

 DRAWN: DKH

 APPROVED: BED

CADD FILE: q:\18449\18-CADD\DWG-REV-A\dwg\Site Plan_V3.dwg SCJ PROJECT NO: 18449.03.02

PRINT DATE: 1/7/2005	SHEET: 1 OF
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Individual APP Application Form (Continued)

*Provide the location in application for all supporting documentation and calculations that were used to prepare and support estimates)

20

THIS SECTION (20) FOR SEWAGE TREATMENT FACILITIES ONLY

- ☒ Attach Certificate of Conformance with Area-wide Quality Management Plan ("208 Plan") Location: Exhibit O
- ☒ Attach Design Report as required by A.A.C. R18-9-B202 & Engineering Plans & Specifications in accordance with R18-9-B203 (if required) Location: Exhibit E

21

☒ **Certification Statement (R18-9-A201(B)(7)) – Required for All Applicants**

[Please attach this page, with your signature, or a separate sheet with the following statement and your signature to your application. ADEQ will not process your application without a signature.]

I certify under penalty of law that this Aquifer Protection Permit application and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including permit revocation as well as the possibility of fine and imprisonment for knowing violations.

Name (print or type) Mr. Kirk Brynjulson

Title (print or type) PRESIDENT

Signature

Date of Signature Day 1 Month Feb. Year 2008

Please check box that applies:

☒ Owner

☐ Operator

☐ Owner & Operator

22

☒ **Initial Fee (R18-9-A201(B)(8))**

The fee rules require an initial fee to be paid in full before ADEQ reviews the application. Fees may be paid by county check, purchase order, city clerk, certified check, or money order, made payable to "ADEQ". ADEQ will not process your application without the appropriate initial fee paid in full. ADEQ's time for application review is subject to an hourly rate in accordance with rule A.A.C. R18-14-102. The current hourly rate for review and processing is \$61/hour up to the maximum fee/cap established in statute Arizona Revised Statute (ARS)§49-241.02. If you have questions about the maximum fee, please contact us.

Check or Money Order Number

3236

Amount of Check

\$ 1,000.00



Individual APP Application Form (Continued)

23 ☒ Financial Capability Demonstration (A.A.C. R18-9-A203(A)-(H))

This section of the rules has been updated and contains specific requirements. A statement from a chief financial officer is required for all facilities/applicants. Although governmental entities may submit a letter specifying their financial arrangements, all other applicants must provide evidence of the financial assurance mechanism(s) that will be used. Combinations of mechanisms may be used by the applicant to meet requirements for covering costs estimated under A.A.C. R18-9-A201(B)(5) - the costs in Form Item #19.

All Applicants Must Provide the Following:

☒ Letter by Chief Financial Officer AAC R18-9-A203(B)(1) Location: Exhibit P

And one of the following, as applicable:

☐ Statement for Federal Agency, County, City, Town or Local governmental entity only R18-9-A203(B)(2) Location:

☒ Financial Assurance Mechanism R18-9-A203(B)(3) Location: Exhibit P
Costs in R18-9-A201(B)(5)

Check All Mechanisms that Were Used and Attach Documentation Required By Rule:

☒ Financial Test for Self-Assurance

☐ Performance Surety Bond

☐ Certificate of Deposit

☐ Trust Fund

☐ Letter of Credit

☐ Insurance Policy

☐ Cash Deposit

☐ Guarantees

24 ☒ Point of Compliance (A.A.C. R18-9-A202(6))

Demonstration of compliance with standards in groundwater (or the discharge) is a foundational requirement of the APP program. The information provided by the applicant should show that each POC is adequately positioned to protect current and foreseeable uses of groundwater. The POC is defined as a plane intersecting the uppermost aquifer that is located down-gradient of the facility with respect to groundwater flow. Groundwater contouring or reliance on existing reports may be necessary to position a POC correctly. If groundwater flow directions change, ADEQ may require that a POC be relocated through an amendment to the permit.

For situations where mounding exists beneath a facility or in an area (such as recharge projects), multiple POCs may be proposed or required that are positioned in a radial pattern. Multiple POCs are also often required for area-wide permits where an inclusive Pollutant Management Area (PMA) is created circumscribing all the discharging facilities that will be covered under one permit. Questions regarding POC designations should be directed to a WPS hydrologist. It is helpful to provide existing data regarding groundwater flow to facilitate discussions. Additional technical guidance is provided in this document.

ADEQ recommends supporting this table with an attached figure depicting the POC location(s) with respect to the discharging facilities and groundwater flow direction. A supplemental table may be submitted for complex permits with multiple POCs. ☐ Supplemental Table Location: ☐ Figure Location:

POC # or Well ID	Latitude (N)	Longitude (W)	Status of Well
1	35 degrees 08' 28"	114 degrees 12' 17"	<input checked="" type="checkbox"/> Proposed <input type="checkbox"/> Existing <input type="checkbox"/> Not Proposed
2	35 degrees 08' 27"	114 degrees 12' 26"	<input checked="" type="checkbox"/> Proposed <input type="checkbox"/> Existing <input type="checkbox"/> Not Proposed



Individual APP Application Form (Continued)

(POC List Continued from Previous Page)

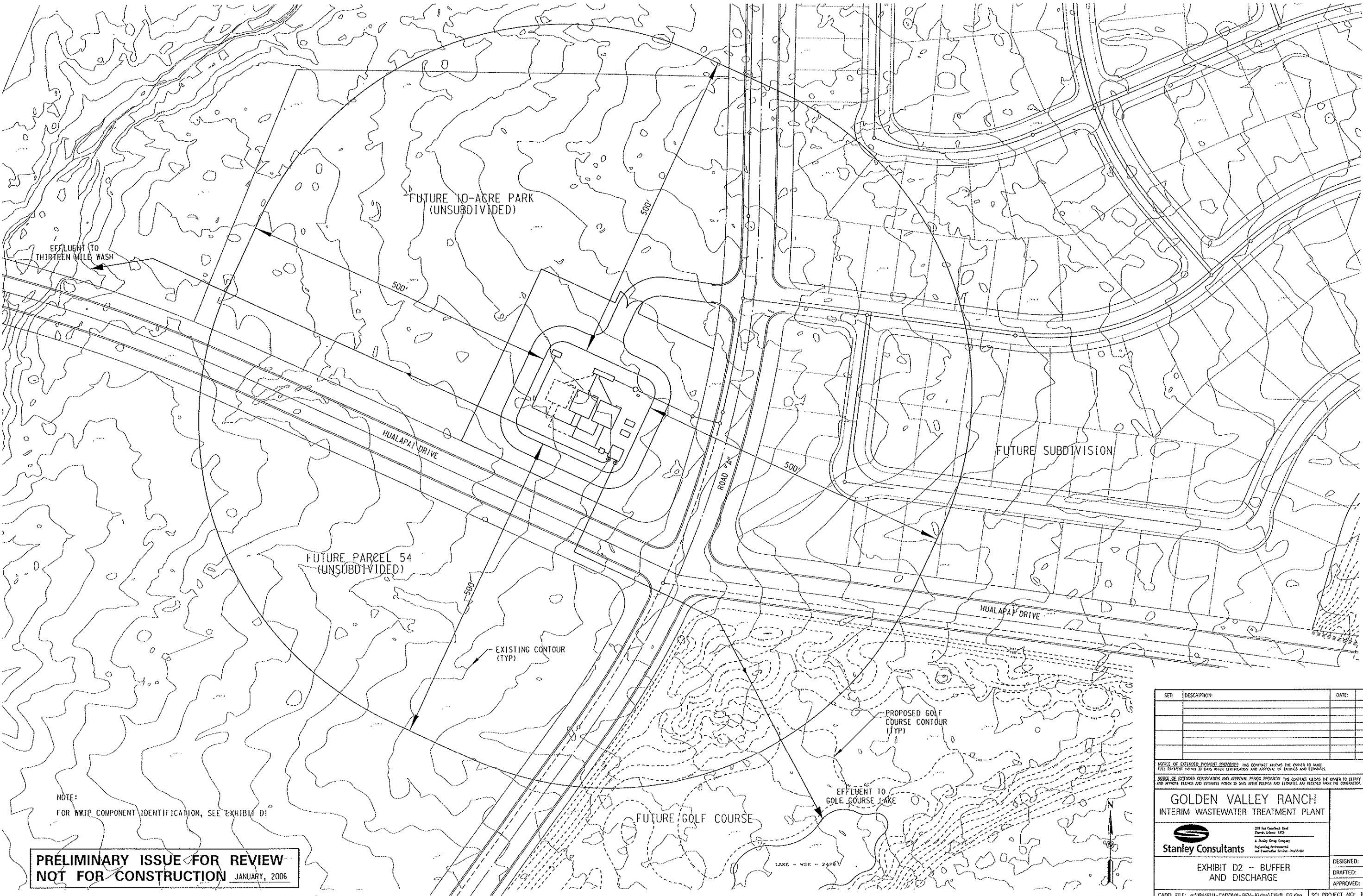
		<input type="checkbox"/> Proposed <input type="checkbox"/> Existing <input type="checkbox"/> Not Proposed
		<input type="checkbox"/> Proposed <input type="checkbox"/> Existing <input type="checkbox"/> Not Proposed
		<input type="checkbox"/> Proposed <input type="checkbox"/> Existing <input type="checkbox"/> Not Proposed
		<input type="checkbox"/> Proposed <input type="checkbox"/> Existing <input type="checkbox"/> Not Proposed
		<input type="checkbox"/> Proposed <input type="checkbox"/> Existing <input type="checkbox"/> Not Proposed
		<input type="checkbox"/> Proposed <input type="checkbox"/> Existing <input type="checkbox"/> Not Proposed
		<input type="checkbox"/> Proposed <input type="checkbox"/> Existing <input type="checkbox"/> Not Proposed

25 ☒ Characterization of the Discharge A.A.C. R18-9-A202(4)

The permit application must include items below. Please provide a reference for where in the application the required information can be found (Attachment Number, Appendix Number, etc.) by the permitting team. Please note that discharge locations should correspond to the list of discharging facilities provided in Item #6 of this form.

<input checked="" type="checkbox"/>	Map of All Discharge Locations (Minimum of 2 copies, 3 recommended)	Exhibit D
<input checked="" type="checkbox"/>	Summary of Past, Present and Future Discharge Activities	Location: Exhibit F
<input checked="" type="checkbox"/>	Material Safety Data Sheets (MSDS) for Operations ¹	Location: N/A
<input checked="" type="checkbox"/>	Discharge Quality -Chemical, Biological and Physical Characteristics of the Discharge	Location: Exhibit E
	Provide One of the Following: <input type="checkbox"/> Results of Analysis <input type="checkbox"/> Sampling & Analysis Plan for Characterizing the Discharge And provide: <input checked="" type="checkbox"/> Written Description of the Expected Discharge Quality	
<input checked="" type="checkbox"/>	Rate and Volume of Discharge (attach calculations)	
	Provide rates used for facility designs, determining storage capacity and impoundment life, etc. For impoundments, provide an attachment with calculations used to determine storage capacity. <input checked="" type="checkbox"/> Design <input type="checkbox"/> gallons per day (gpd) <input type="checkbox"/> gallons per minute (gpm) Flow: 0.24 <input checked="" type="checkbox"/> million gpd <input type="checkbox"/> tons per day <input type="checkbox"/> Other Unit:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Provide Calculations used to determine storage capacity, etc.	Location: Exhibit E
<input checked="" type="checkbox"/>	Frequency of Discharge (Choose One or all that Apply)	
	<input type="checkbox"/> Seasonal (describe):	
	<input type="checkbox"/> Constant	
	<input checked="" type="checkbox"/> Intermittent (describe): Total anticipated annual discharge equal to 20 days of flow at 240,000 gpd	
	<input type="checkbox"/> Temporary (describe):	
	<input type="checkbox"/> Contingency/Emergency Use Only (describe):	
	<input type="checkbox"/> Other	
<input checked="" type="checkbox"/>	Provide Map of Pollutant Management Area(s) ARS§49-244(1) ADEQ recommends providing (3) copies, a minimum of (2) copies are required For an area-wide permit this may circumscribe multiple APP discharging facilities. Multiple Pollutant Management Area (PMAs) may also be proposed by the applicant. This map is used in the consideration of POCs.	N/A

¹ The applicant may provide copies of all relevant MSDS or may provide a statement that the MSDS will be made available to inspectors upon request at the time of inspection or supplied to ADEQ within 30 days of written request.




NOTE:
FOR WWTP COMPONENT IDENTIFICATION, SEE EXHIBIT D1

PRELIMINARY ISSUE FOR REVIEW
NOT FOR CONSTRUCTION JANUARY, 2006

SET:	DESCRIPTION:	DATE:	REV:

NOTICE OF EXTENDED PAYMENT PROVISION: THIS CONTRACT ALLOWS THE OWNER TO MAKE FULL PAYMENT WITHIN 30 DAYS AFTER CERTIFICATION AND APPROVAL OF BILLINGS AND ESTIMATES.
NOTICE OF EXTENDED CERTIFICATION AND APPROVAL PERIOD PROVISION: THIS CONTRACT ALLOWS THE OWNER TO CERTIFY AND APPROVE BILLINGS AND ESTIMATES WITHIN 30 DAYS AFTER BILLINGS AND ESTIMATES ARE RECEIVED FROM THE CONTRACTOR.

GOLDEN VALLEY RANCH INTERIM WASTEWATER TREATMENT PLANT	
 Stanley Consultants <small>201 East Camelback Road Phoenix, Arizona 85016 A Stanley Group Company Engineering, Environmental and Construction Services Worldwide</small>	DESIGNED: DKH DRAFTED: DKH APPROVED: BEC
EXHIBIT D2 - BUFFER AND DISCHARGE	
CADD FILE: q:\184814\11-CADD\11-REV-A\dwg\EXHIB D2.dgn	SCI PROJECT NO: 184814.02
SCALE: NONE	PRINT DATE: 1/17/2006 SHEET: 1 OF

GOLDEN VALLEY RANCH INTERIM WWTP - DESIGN REPORT

V-3 R-



Individual APP Application Form (Continued)

26	<input checked="" type="checkbox"/>	Technical Capability Demonstration
<p>All plans, specifications, reports, or any other professional documents submitted in support of the application which fall within the statutory definition of Engineering practice, Geological practice, or Land Surveying practice must be prepared by a qualified preparer and must be sealed and signed in accordance with the applicable laws and rules of the Arizona State Board of Technical Registration for Architects, Assayers, Engineers, Geologists, Landscape Architects, and Land Surveyors before submission to ADEQ.</p>		
<input checked="" type="checkbox"/>	Engineering Design (attach supplemental pages if needed)	
	Name of P.E.	Bruce E. DiFrancisco
	Title	Senior Environmental Engineer
	Firm	Stanley Consultants, Inc.
	BTR Registration No.	30181
	Pertinent Licenses and Certifications	
	Provide the Following:	
	<input checked="" type="checkbox"/> Provide information regarding professional training relevant to the design and construction of the facility. Location in APP: Exhibit Q	
	<input checked="" type="checkbox"/> Provide project summaries and resumes showing work experience relevant to the design and construction of the facility. Location in APP: Exhibit Q	
	<input checked="" type="checkbox"/> Provide the basis for the party's technical capability relevant to the design of the facility or its components. Location in APP: Exhibit Q	
<input checked="" type="checkbox"/>	Construction Contractor (attach supplemental pages if needed)	
	Name	TBD (To Be Determined) - will provide to ADEQ when selection is made
	Title	
	Firm	
	BTR or ROC Number	
	Pertinent Licenses & Certifications	
	<input type="checkbox"/> Provide information regarding professional training relevant to the construction of the facility. Location in APP:	
	<input type="checkbox"/> Provide project summaries and resumes showing work experience relevant to the construction of the facility. Location in APP:	
	<input type="checkbox"/> Provide the basis for the party's technical capability relevant to the construction of the facility or its components. Location in APP:	
<input checked="" type="checkbox"/>	Facility Operator (attach supplemental pages if needed) - Operations & Maintenance	
	Name	Ray Jones
	Title	President
	Firm	Aricor Water Solutions
	BTR Number, if Applicable	
	Pertinent Licenses and Certifications	ADEQ Guide 3 WW Collections & Treatment Operator
	<input checked="" type="checkbox"/> Provide information regarding professional training relevant to the Operation & Maintenance of the facility. Location in APP: Exhibit R	
	<input checked="" type="checkbox"/> Provide project summaries and resumes showing work experience relevant to the Operations & Maintenance of the facility. Location in APP: Exhibit R	
	<input checked="" type="checkbox"/> Provide the basis for the party's technical capability relevant to the O & M of the facility	



Individual APP Application Form (Continued)

or its components. Location in APP: Exhibit R

Continued on next page



Individual APP Application Form (Continued)

<input checked="" type="checkbox"/>	Hydrogeologic Studies
Name	N/A
Title	
Firm	
BTR Number	
Pertinent Licenses & Certifications	
<input type="checkbox"/>	Provide information regarding professional training relevant to the hydrogeologic components of the application. Location in APP:
<input type="checkbox"/>	Provide project summaries and resumes showing work experience relevant to the hydrogeologic components of the application. Location in APP:
<input type="checkbox"/>	Provide the basis for the party's technical capability relevant to the hydrogeologic components of the application. Location in APP:
<input checked="" type="checkbox"/>	Closure Planning/Design & Closure Costs
Name	Bruce E. DiFrancisco
Title	Senior Environmental Engineer
Firm	Stanley Consultants, Inc.
BTR Number	30181
Pertinent Licenses & Certifications	
<input checked="" type="checkbox"/>	Provide information regarding professional training relevant to the Closure costs and planning components of the application. Location in APP: Exhibit Q
<input checked="" type="checkbox"/>	Provide project summaries and resumes showing work experience relevant to the Closure components (including costs) of the application. Location in APP: Exhibit Q
<input checked="" type="checkbox"/>	Provide the basis for the party's technical capability relevant to the Closure components of the application. Location in APP: Exhibit Q
27	<input checked="" type="checkbox"/> Contingency Plan Exhibit I
<p>A Contingency Plan must be submitted with your application. If you have questions regarding the applicability of any of the items below, please schedule a pre-application meeting or contact the appropriate Unit Manager of the Water Permits Section (Industrial, Mining, and Wastewater, Reuse & Recharge). The APP Framework (formerly referred to as the "boilerplate") contains standard language for some of the items below. ADEQ also has contingency language for specific types of APP regulated facilities such as double lined impoundments. Copies of the APP Framework and examples of typical contingency language used in permits can be provided to you upon request. You may need to propose additional language, or steps that are specific to your facility design and setting.</p> <p>A contingency plan prepared to meet the requirements of the Federal Water Pollution Control Act (P.L. 92-500; 86 Stat. 816; 33 U.S.C. 1251, et seq., as amended), or the Resource Conservation and Recovery Act of 1976 (P.L. 94-580; 90 Stat. 2796; 42 U.S.C. 6901 et seq., as amended), may be amended to meet the requirements of an APP application and submitted to the Department for approval instead of a separate aquifer protection contingency plan, with the exception of plans for exceeding alert levels, discharge limits and aquifer quality limits which are specific to the APP program. If your permit will contain discharge monitoring and groundwater monitoring, include contingency requirements specific to your facility and monitoring program in the application. Potential responses are identified beneath each plan. Please reference the location in the application submittal for each of the items below.</p>	
<input checked="" type="checkbox"/>	Provide a General Plan of Response to Violations of Permit Conditions May include well installation, ceasing discharge, performing repairs, etc.
<input checked="" type="checkbox"/>	Provide Required Plan for Response to Violations of AWQS at the POC



Individual APP Application Form (Continued)

	<ul style="list-style-type: none"> • Verification Sampling • Additional Investigation, such as modeling impacts, or installing monitoring wells • Increased monitoring frequency or monitoring for revised constituent list (additional parameters) • Identification of Potential Receptors (Groundwater Users) • Notification to Down-gradient Groundwater Users, if appropriate • Implementation of Hydrologic Study to Assess Extent of Impact • Preliminary Triggers for Corrective Actions • Evaluation of Facility BADCT/Upgrades • Reporting Procedures
<input checked="" type="checkbox"/>	Response to Exceeding of a Discharge Monitoring Alert Level, if proposed
	<ul style="list-style-type: none"> • Increased or Additional Monitoring • Evaluation of BADCT, corrections as needed • Reporting Procedures
<input checked="" type="checkbox"/>	Response to Exceeding Groundwater Monitoring Alert Level, if proposed
	<ul style="list-style-type: none"> • Verification Sampling • Reporting to ADEQ in accordance with standard requirements • Increased monitoring • Evaluation of BADCT, corrections as needed • Assessment of groundwater flow
<input checked="" type="checkbox"/>	Response to Exceeding a Discharge Limitation or Limit
	<ul style="list-style-type: none"> • Verification Sampling • Reporting to ADEQ in accordance with standard requirements • Evaluate BADCT performance • For Sewage Treatment Facilities – Assess pre-treatment program • Assess needs for upgrade or operational changes • Assess need to install groundwater monitoring wells or revise the monitoring program
<input checked="" type="checkbox"/>	Provide a Plan for Response to Imminent and Substantial Endangerment to the Public Health and Environment (including contact list with names and telephone numbers) Location: Exhibit S Exhibit I
<input checked="" type="checkbox"/>	Provide a Response Plan for Unauthorized Discharges/Releases
	<ul style="list-style-type: none"> • Notification to ADEQ • Procedures to be used to control discharge • Personnel and equipment used to respond Exhibit I
<input checked="" type="checkbox"/>	Provide a 24-Hour Emergency Response Plan Exhibit I
<input checked="" type="checkbox"/>	Provide an Emergency Contact for the permit (Form Item No. 11)



Individual APP Application Form (Continued)

28 | General Instructions & Information

The remainder of this document provides general information and limited guidance for completing the individual APP application form. For more specific, detailed guidance, the permit applicant is directed to the current version of the APP Application Guidance Document.

If you have questions that are not addressed by the information provided in this application package, please contact the Unit Manager for the appropriate Unit below:

- Mining Unit Manager - (602)771-4663
- Industrial Wastewater – (602)771-4385
- Wastewater, Recharge and Reuse Unit - (602)771-4683

If your questions are regarding hydrogeology, please ask to speak with a hydrologist also.

A | Permit Amendments

Amendment to an existing APP requires use of a different form, a Request for Amendment Form. While this packet may be used as guidance, especially for significant amendments, the Request for Amendment form must be used for permit transfers, all forms of amendment (significant, minor and other). The Request for Amendment should be accompanied by an explanation of the purpose of the amendment.

B | Rule and Statute Citations

Citations to rule and statute have been provided in the form to guide you through the application completion process. Specific requirements are contained in rule and statute and ADEQ recommends that applicants look up the requirements and authority for components of the permit application to make sure that sufficient information is provided.

C | Groundwater & Discharge Monitoring

ADEQ uses standard tables for groundwater and discharging monitoring. You may wish to obtain examples from permits that have been issued for facilities that are similar to your facility and use these as a guideline for developing a monitoring program. Examples of proposed tables may be submitted with your application.

Different tables may be required for initial discharge characterization or ambient groundwater quality sampling compared to routine sampling programs. If existing groundwater quality data is available, ADEQ may require you to establish alert levels and Aquifer Quality Limits (AQLs) in your permit using the existing data.

Alert Levels and Discharge Limits that are set in discharge monitoring tables are typically based on treatment performance standards for new sewage treatment facilities and also reclaimed requirements. For other facilities, discharge limits will depend on the character of the discharge and the control technology that is used/proposed.

The application should include details regarding the proposed discharge and groundwater monitoring plans that will be followed during the operational life of the facility – including ambient or initial monitoring and routine monitoring.

D | Location and Topographic Map

Submit a topographic map, or other appropriate map (pre-approved by the Department) showing relief:

- The facility site and property boundary and the contiguous land area



Individual APP Application Form (Continued)

- The known use of adjacent properties next to the facility (show boundaries where possible)
- All known water well locations found within one-half mile of the facility and well use (see below)
- Latitude and longitude of all APP-discharging facilities
- Scale and north arrow
- Discharge Impact Area, if appropriate

Submit a description of well construction details and well uses (including ADWR completion reports and well logs, when available) for all wells shown on the location map. All information must be presented so that the corresponding well locations can be easily identified.

E Facility Site Plan

Submit a facility site plan which shows

- All known property lines/property boundaries
- Frame of reference (e.g., street intersections, Township and Range, Latitude and Longitude, etc.)
- Topography/Drainage Features
- Buildings and structures
- Water wells and monitoring wells on-site and reference names
- Existing borings or sampling points and reference names
- Injection wells including drywells, and their uses
- Location of all points of discharge listed in Table on Page 5 of the application
- Proposed Point(s) of Compliance (see Part 6 below)
- Pollutant Management Area(s)
- Location of Reuse Areas (if appropriate)
- North Arrow and Scale

The site plan must either be drawn to scale or all dimensions and distances must be indicated. For wastewater treatment plants, the number of pages of required design drawings may be reduced; please see the project officer for recommendations before you make any submittals.

If possible, this site plan should be provided to ADEQ both in hard copy and in electronic format such as GIS or as a JPG or TIFF file.

F Facility Design Plans

For existing facilities, submit design plans which indicate:

- As-built design details relevant to discharge control and BADCT analysis
- As-built configuration of basins, ponds, waste storage areas, drainage diversion features, or other engineered elements of the facility affecting discharge
- Proposed upgrades to an existing facility **must** include **both** the proposed and existing, as-built design details, and the proposed and as-built configuration of basins, ponds, waste storage areas, drainage diversion features, or other engineered elements of the facility affecting discharge.

For new facilities, submit design plans which indicate:

- Proposed design details and reports sealed by an engineer under BTR requirements
- Proposed configuration of basins, ponds, waste storage areas, drainage diversion features, or other engineered elements of the facility affecting discharge.

All facility design plans must be drawn to scale and all dimensions and distances must be indicated. Design plans must be sealed in accordance with Arizona Board of Technical Registration



Individual APP Application Form (Continued)

requirements. For Sewage Treatment Facility, specifics regarding design plan are provided in rule.

G Closure and Post-Closure Strategies/Plan

The application must include a strategy or plan for how the facility will be closed. An example of items the strategy or plan may include or consider:

- Identification of the closure goal such as achieving clean closure vs. other closure status
- Fate of impoundment liner systems – removed and disposed or closed (left) in place
- Grading and Drainage Plans – such as bringing impoundments back to grade or grading to prevent ponding of stormwater
- Post closure groundwater monitoring if clean closure is not proposed
- Method or approach to defining the extent of contamination if needed
- Removal of facility piping, tanks, structures, etc.

This should be an overview of steps or assumptions that are used to create the closure cost estimates for the financial capability demonstration.

H Characterization of the Discharge

The permit applicant must provide sufficient details and information for evaluating BADCT and demonstrating compliance with Aquifer Water Quality Standards (AWQS) at the Point of Compliance (POC). The quality of the discharge is an integral part of evaluating proposed BADCT and discharge monitoring requirements and also determining whether or not groundwater monitoring is required to demonstrate compliance with Aquifer Water Quality Standards at the applicable Point of Compliance. Therefore, adequate information regarding all past, present, and future discharges must be provided.

Material safety data sheets (MSDS) – these should be provided or available upon request or inspection for all chemicals used in the operation or treatment processes that have been and will be discharged to the surface or subsurface environment in accordance with the checklist.

Description of Discharge Quality - Provide a description of the chemical, biological, and physical characteristics of all past, present, and future discharges. Every discharge should be evaluated, at a minimum, for pollutants generated in the process or that would likely be present in the discharge and constituents with numeric Aquifer Water Quality Standards. For individual closure permits, ADEQ suggests that applicants consider the list of constituents with Soil Remediation Levels and Groundwater Protection Levels and assess the discharge for these constituents.

Discharge Characterization - If the character of the discharge is unknown, ADEQ will require a discharge characterization that will include collection of representative samples of the discharge as part of an application deficiency or for new facilities under a compliance schedule in the permit after operations start up. At a minimum the discharge should be assessed for constituents with established numeric Aquifer Water Quality Standards. However, you may also wish to consider constituents that would make good indicators of discharge, and in the case of closure, constituents with established soil remediation levels or groundwater protection levels. A Sampling and Analysis Plan should be provided that proposes how the discharge will be characterized and the plan should propose a schedule for sampling/characterization. Sometimes the discharge is characterized after the start-up of operations.

For current discharges, submit or propose to submit analytical data from representative samples of the discharge, and include all laboratory reports and quality control data and supporting documentation. A series of sampling events is often necessary to obtain representative data. The samples must be analyzed for all constituents that might potentially be present in concentrations exceeding aquifer



Individual APP Application Form (Continued)

water quality standards (both numeric and narrative). Analysis for general inorganic water quality parameters (total dissolved solids, major ions, etc.), which can be used as indicators of potential impacts to groundwater, is recommended.

For proposed discharges, include chemical analyses or projected chemical composition based on manufacturer's data, bench or pilot scale testing, or data from similar operations – if this information is available.

For proposed industrial discharges, provide a sampling and analysis plan for characterizing the discharge after start up of operations to verify discharge quality, and if appropriate, liner compatibility and a schedule for sample collection. The sampling and plan should specify sampling collection locations, methods, analytical methods and quality assurance measures. If multiple sampling points are proposed for your facility, a map or figure depicting the sampling locations is recommended along with latitude and longitude coordinates for each sampling point.

For closed facilities or past discharges, include all available supporting documentation and analytical data, including analytical results defining the extent of contamination, if present.

Discharge Monitoring Plan

ADEQ suggests that the applicant provide a discharge monitoring plan that proposes constituents/parameters, monitoring frequency, and reporting frequency that are appropriate for the facility type and BADCT requirements. The monitoring plan is a method of demonstrating that BADCT performance standards are met during the life of the facility. If these items are not proposed, ADEQ may establish a plan in the permit based on requirements for other similar facilities.

Not all facilities require routine, on-going discharge monitoring. In some cases only initial characterization is needed, such as in the case of industrial discharge to a double lined impoundment with a leak detection and recovery system (LCRS) which is state of the art impoundment BADCT. If BADCT relies heavily on treatment, then expect that the discharge monitoring will be required to demonstrate that BADCT has been achieved.

Discharge monitoring is required for Sewage Treatment Facilities (STFs) which are classified and discharge to reclaimed uses



Individual APP Application Form (Continued)

I Demonstration of Compliance with Aquifer Water Quality Standards at the POC

In order to obtain an aquifer protection permit, the applicant must demonstrate that the facility will not cause or contribute to a violation of Aquifer Water Quality Standards¹ (AWQS) at the applicable point of compliance². The demonstration must designate the point or points of compliance for the facility, regardless of whether groundwater monitoring is proposed. If an AWQS for a pollutant has been exceeded in an aquifer, the application must include ambient groundwater quality data (an ambient report) showing groundwater concentrations exceeding the AWQS and include a demonstration that no additional degradation of the aquifer relative to that pollutant and as determined at the applicable POC, will occur as a result of discharge from the facility.

The amount of information needed to support the demonstration of compliance will vary depending on the design of the facility, the characteristics of the discharge from the facility, and the ambient groundwater quality at the facility. In general, the **demonstration requires a hydrogeologic study** which defines and characterizes the discharge impact area (DIA), including impacts to the vadose zone, for the expected duration/life of the facility and post-closure period. The permit should include a Discharge Impact Area Map and criteria used to create the map.

ADEQ may allow a permit applicant to perform an abbreviated hydrogeologic study, or if warranted, no hydrogeologic study, based upon the quantity and characteristics of the pollutants discharged, the methods of disposal, and the site conditions. For example if the discharge meets numeric AWQS and the depth to groundwater limits the potential for impact, then no further degradation would be expected in groundwater and groundwater monitoring would not typically be required by ADEQ.

Information from a previous study of the affected area may be included to meet a requirement of the hydrogeologic study, if the previous study accurately represents current hydrogeologic conditions. Sources of data such as the Arizona Department of Water Resources (ADWR) and ADEQ's groundwater database may provide valuable background information that can be used for the pre-application meeting and for making decisions about what is needed to fill in data gaps.

A pre-application meeting is a good opportunity to go over specific requirements for your facility based on hydrogeologic setting and facility information (see information regarding pre-application meetings at the end of this packet). It is possible that the requirements may be reduced based on information presented by the applicant at the pre-application meeting. At a minimum, the permit applicant should contact the Department, by phone or in writing, with any questions regarding the applicability of any of the information below to the subject facility.

¹ Aquifer Water Quality Standards include both numeric (AAC R18-11-406) and narrative (AAC R18-11-405) standards. Narrative standards include pollutant concentrations which endanger human health or impair existing or reasonably foreseeable uses of water in an aquifer and water quality standards for navigable waters of the state.

² The point of compliance (POC) is the point at which compliance with aquifer water quality standards is to be determined. ARS § 49-244 defines the POC as a vertical plane downgradient of the facility (with respect to groundwater flow) that extends through the uppermost aquifers underlying that facility. For hazardous substances, the POC should be located at the downgradient edge of the pollutant management area (PMA). The PMA is the limit projected in the horizontal plane of the area on which pollutants are or will be placed. The PMA includes horizontal space taken up by any liner, dike or other barrier designed to contain pollutants in the facility. If the facility contains more than one discharging activity, the PMA is described by an imaginary line circumscribing the several discharging activities. The WPS substantive policy on area-wide permits and PMAs may also be useful.



Individual APP Application Form (Continued)

Supporting documentation and/or references should be provided where applicable (e.g., photocopies of ADWR maps or pages from reference material, laboratory data, boring logs, technical reports from site investigations at or near the site, etc.).

- A description of the surface and subsurface geology, including a description of all borings (such as lithologic logs and sampling results) and map of boring location
- The location of any perennial or ephemeral surface water bodies
- The location of the 100-year flood plain and an assessment of the 100-year flood surface flow and potential impacts on the facility
- The depth to groundwater and the characteristics of the aquifer and geologic units with limited permeability, including hydraulic conductivity and transmissivity of the aquifer(s)
- Rates, volumes, and directions of surface water and groundwater flow, including hydrographs, if available, and equipotential maps showing the direction of groundwater flow, pollutant management area(s), and correct placement of the proposed POC(s) with respect to groundwater flow.
- A documentation of the existing quality of the water in the aquifers underlying the site, including, where available, the method of analysis and quality assurance and quality control procedures associated with the documentation. ADEQ encourages applicants to submit ambient or existing groundwater quality data in spreadsheet form.
- A description of any expected changes in the elevation and flow directions of the groundwater that may be caused by the facility (for example mounding beneath a percolation pond or changes in flow patterns from injection or recharge)
- A description of any anticipated changes in the water quality expected as a result of the discharge
- A documentation of the extent and degree of any known soil contamination in the vicinity of the facility
- An assessment of the potential of the discharge to cause the leaching of pollutants from surface soils or vadose materials
- A map of the facility's discharge impact area and the criteria and methodologies used to determine the discharge impact area
- A description of the proposed location of each point of compliance. The location(s) of the proposed point(s) of compliance should be indicated on the facility site plan, and the latitude(s) and longitude(s) should be provided. Identify whether the point(s) of compliance are for hazardous or non-hazardous substances.
- The application must clearly state whether or not monitoring wells have been installed at the POC(s) or will be as part of permitting efforts. If monitoring wells have been installed, the design details for the wells should be provided, including depth, screened interval, current depth to groundwater and well use. The application should justify the screened interval with respect to the uppermost aquifer and if multiple aquifers are present, should justify the placement of the screen(s).
- If new monitoring wells are proposed as part of the APP application, the application should include the preliminary well design, and a proposed plan for conducting initial ambient groundwater monitoring and for performing statistical analysis of the data to propose Alert Levels (ALs) and AQL(s) for the groundwater monitoring program.



Individual APP Application Form (Continued)

- For new monitoring wells, the permit application should propose dates for when wells will be installed, for submittal of well installation reports and as-builts, and for submitting an Ambient Groundwater Monitoring Report to ADEQ documenting groundwater quality in the new well(s).

For new or existing facilities, or for closed facilities that require post-closure monitoring and maintenance, a detailed proposal should also be submitted which indicates how compliance with Aquifer Water Quality Standards will be monitored (including a monitoring plan) and maintained over the operational life of the facility and the post-closure period, if applicable. The proposal should include any or all of the following, depending on the type of application:

- | | |
|--|------------------------|
| • Routine Monitoring Plans for wells | • Compliance schedules |
| • Alert levels | • Closure strategy |
| • Aquifer Quality Limits (AQLs) | • Post-closure plans |
| • Discharge limitations for discharge monitoring | |
| • Contingency plans | |

J Best Available Demonstrated Control Technology Evaluation & Statement

In order to obtain an aquifer protection permit, the applicant must demonstrate that the facility will be so designed, constructed, and operated as to ensure the greatest degree of discharge reduction achievable through technology, design, construction, processes, operating methods or other alternatives, including, where practicable, a technology permitting no discharge of pollutants. **BADCT** can **either** be demonstrated through justifying the design as BADCT in a **site-specific** manner, **or** by utilizing a design that is consistent with “**prescriptive**” design features or performance standards identified by the department for a few limited classes of facilities.

Site specific characteristics alone cannot satisfy BADCT requirements. New facility BADCT applies to existing facilities that undergo expansion or major modification as defined in ARS§49-201(22). New Sewage Treatment Facilities have specific BADCT requirements and treatment performance standards under A.A.C. R18-9-B204.

In general, the better the quality of the discharge achieved and demonstrated through discharge characterization and monitoring, the less emphasis is placed on control technology and groundwater monitoring to demonstrate compliance with Aquifer Water Quality Standards (AWQS) at the applicable Point of Compliance. The higher the BADCT in terms of achieving improved discharge quality that meets AWQS, the easier it is for the applicant to make the argument that compliance with standards is met at the ground surface or point of discharge to an impoundment, and groundwater monitoring is not necessary for the demonstration of compliance with standards.

An example Table of Contents is provided after this text that may be followed by the applicant to make sure required information is provided to ADEQ.

Sewage Treatment Facilities – Exclusions from Evaluation Process

BADCT for new sewage treatment facilities is specified in rule including but not limited to requirements for noise, odor control, set-backs, and treatment performance standards. BADCT is established in Article 2, Part B and facilities meeting this, do not require a BADCT evaluation (A.A.C. R18-9-A202(5)(b)) or statement (A.A.C. R18-9-A202(5)(a)).



Individual APP Application Form (Continued)

Prescriptive BADCT

The **prescriptive** approach is currently available for the following facility types:

- Mine non-storm water ponds
- Mine process solution ponds
- Heap leach pads using synthetic liners
- Tailing impoundments with synthetic liners
- Industrial surface impoundments using synthetic liners, such as impoundments at power plants/utilities
- Industrial discharges using clean water treatment technology

ADEQ recommends that the applicant review BADCT guidance documents and contact us for details regarding current prescriptive configurations. Making a BADCT demonstration using the prescriptive approach involves submitting design information to show that your design is consistent with the guidance material and prescriptive designs in use today.

Prescriptive BADCT does not require the same detailed BADCT alternative evaluation as Site-specific BADCT, but rather that the applicant commit to using state-of-the-art design and treatment methods.

Evaluation of Alternatives – Site-specific BADCT

The APP application must contain an evaluation of BADCT alternatives in accordance with A.A.C. R18-9-A202(A)(5)(b) and related statement. This evaluation of alternatives should include an assessment of options compared to discharge reduction achieved and cost; technical advantages and disadvantages. Other aspects of BADCT such as water conservation and beneficial use may be included in this evaluation. For a new facility, the BADCT evaluation must include an industry-wide evaluation of the economic impact of implementation of alternative technologies. The BADCT evaluation should provide the justification for the proposed selected BADCT design.

The evaluation of each alternative discharge control measure should include the amount of discharge reduction achievable, site specific hydrologic and geologic characteristics, other environmental impacts, and water conservation or augmentation. For ease of review, ADEQ recommends the use of tables for comparing alternatives. These tables should summarize the hydrologic and engineering variables associated with the design of each alternative BADCT demonstration.

A new facility must limit the discharge of those pollutants specified in A.R.S. § 49-243(I) to the maximum extent practicable regardless of cost.

In selecting the proposed BADCT alternative based on a site specific demonstration, the following should be provided:

- A **description** of the pollution control technologies, processes, and/or operating methods to be employed in the facility; and,
- A **discussion** of how these technologies, processes, and/or operating methods meet the BADCT requirements



Individual APP Application Form (Continued)

The evaluation should conclude with a statement regarding the proposed BADCT, in accordance with rule AAC R18-9-A202(A)(5)(a)(i-iii).

Existing Facilities

For an existing facility, in addition to the above, the following factors shall also be considered:

- Toxicity, concentrations and quantities of discharge likely to reach an aquifer from various types of control technologies;
-
- The total costs of the application of the technology in relation to the discharge reduction to be achieved from such application;
- The age of equipment and facilities involved;
- The industrial and control process employed;
- The engineering aspects of the application of various types of control techniques;
- Process changes;
- Non-water quality environmental impacts; and,
- The extent to which water available for beneficial uses will be conserved by a particular type of control technology.

Closure of Facilities and "No Further Discharge"

BADCT guidance is currently unavailable for closure permits. The applicant must demonstrate that the proposed closure eliminates, to the greatest degree practicable, any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance (see Part B.6.). ADEQ typically requires the applicant to define the extent of contamination as part of closure and to provide a report of results in support of closure. Closure may include using Soil Remediation Levels and Groundwater Protection Levels to make the demonstration of "no further discharge", and compliance with AWQS at the designated POC. The applicant may be required to establish and maintain engineering controls to make the demonstration of no further discharge. Tools such as a Declaration of Environmental Use Restriction (DEUR) may also be utilized for some closure activities.

If a demonstration cannot be made, then post-closure activities will be a part of the permit. Examples of common post-closure activities include but are not limited to groundwater or vadose zone monitoring, maintenance of engineering controls, or soil sampling.

Closure Costs and Strategies

Based on rule the applicant is required to estimate costs that are then used for financial capability. The closure costs are required to be based on a closure strategy or plan that is submitted with the



Individual APP Application Form (Continued)

application. The closure strategy should at a minimum provide an overview of what the applicant expects closure to consist of and also whether the applicant proposes to achieve clean closure or not. See pages 13-14.

The example Table of Contents below is provided to assist the applicant in preparing and submitting an adequate BADCT Demonstration.

Example Table of Contents - Individual BADCT Demonstration(1)

1. Introduction
2. Relevant Site Factors
 - 2.1 Solution and Waste Characteristics
 - 2.2 Site Characteristics
 - 2.2.1 Surface Hydrology
 - 2.2.2 Hydrogeology
 - 2.2.3 Geologic Hazards
3. Site Selection
 - 3.1 Alternatives
 - 3.2 Evaluation of Alternatives
 - 3.3 Recommended Site
4. Reference Design
 - 4.1 Design
 - 4.2 Construction Considerations
 - 4.3 Operations and Operational Monitoring
 - 4.4 Closure and Post-Closure Considerations
 - 4.5 Estimated Aquifer Loading
 - 4.5.1 Potential Release
 - 4.5.2 Estimated Travel Times to Groundwater Table
 - 4.5.3 Estimated Attenuation of Pollutants
 - 4.5.4 Estimated Aquifer Load
 - 4.6 Estimated Cost of Reference Design
5. Alternative Designs
 - 5.1 Selection of Alternatives
 - 5.2 Screening of Alternatives
 - 5.3 Description of Most Promising Alternative Systems
 - 5.4 Aquifer Loading of Most Promising Alternative Systems
 - 5.5 Estimated Cost of Most Promising Alternative Systems
6. Selection of BADCT Design
 - 6.1 Selection Criteria
 - 6.2 Evaluation of Reference Design and Alternative Systems
 - 6.3 Selected BADCT Design

Example



Individual APP Application Form (Continued)

Example Appendices:

- Discharge/Solution and Waste Characterization Data
- Groundwater Quality Data
- Geologic Hazards Evaluation
- Geotechnical Data to evaluate soil permeability and soil types
- Surface Water Evaluations
- Construction Procedures and QA/QC for Control and Treatment Technology
- Slope Stability Evaluations
- Water Balance and Storage Capacity Evaluations

⁽¹⁾ All applicable sections should clearly state the manner in which Individual BADCT requirements are satisfied by the proposed BADCT design.



Individual APP Application Form (Continued)

J Preparing for A Pre-application Meeting

The purpose of this section is to describe what to bring to an Aquifer Protection Permit pre-application meeting. Although not mandatory, a Pre-application meeting is highly recommended: 1) it will facilitate a complete application, 2) may limit some of the requirements for a particular facility, and, 3) typically results in quicker processing times, which may lower your application fees and other costs.

Meeting Agenda

ADEQ has provided an example of a typical agenda that will be prepared jointly by ADEQ and the applicant, and will be presented at the beginning of the Pre-application meeting. The agenda is used for meeting facilitation. A pre-application meeting should include a sign in sheet for all persons attending the meeting. At the end of the meeting, it is helpful to summarize areas of agreement and identify areas that may require additional discussion or follow up between ADEQ and the permit applicant.

A pre-application meeting affords you as the permit applicant an early opportunity to meet with ADEQ to develop a mutual understanding of the APP program basic requirements, and identify specific requirements for your facility. This is also your opportunity to present your facility's operations and conceptual BADCT and discuss issues relevant to its permitting, such as possible requirements for discharge and groundwater monitoring, facility BADCT design, facility maintenance and operations and closure. With knowledge of your facility, ADEQ can help you focus on information that is needed to complete the APP process. For example, not every facility will need an extensive hydrologic study. Presenting the hydrogeologic setting at the pre-application meeting may allow you to focus efforts and obtain input from ADEQ that limits the amount of information that must be submitted in the application. An example is that sometimes groundwater monitoring is not required at facilities that discharge to double lined impoundments with leak collection and recovery systems and ADEQ may only require a limited hydrogeologic study to determine depth to groundwater and ambient groundwater quality.

ADEQ suggests that an applicant for an individual APP bring the following information and be prepared to discuss each item at the meeting:

- Location map - such as a state road map, showing general location of the facility
- Topographic map - showing location of the facility (7.5 min. USGS quadrangle map, if available. Map must show Township, Range, and Section)
- Site map - showing all existing and planned features of the site, if known, and locations of existing water supply and monitor wells and borings (if present)
- Financial Demonstration Options
- BADCT - Proposed (conceptual) or design features of discharge control measures and a description of how the facility will be designed, constructed and operated as to ensure the greatest degree of discharge reduction achievable



Individual APP Application Form (Continued)

- Discharge characterization (from each discharging facility) including the expected design discharge rate and proposed routine discharge monitoring (if any) and expected chemical composition of the discharge or plans for discharge characterization
- Hydrogeologic information:
 - Ambient groundwater quality;
 - Groundwater depth and flow direction beneath the facility;
 - Rock and soil types in site vicinity of the facility;
 - Subsurface lithology - driller's logs may be available from the Arizona Department of Water Resources (ADWR);
 - Wells, and their uses, within ½ mile radius of site (available from ADWR) (Identify nearest well to the site if no wells are within ½ mile);
 - Location of surface water bodies and ephemeral streams in the vicinity of the facility;
 - Existing Groundwater quality data beneath the facility or in the area using existing wells; and,
 - Proposed monitoring program and method for setting Alert Levels (ALs), Aquifer Quality Limits (AQLs) and use of indicator parameters for groundwater monitoring - if appropriate given BADCT and discharge quality
 - Planned life of facility
 - Information on past land use
 - Previous facility discharges on the property (quantity and quality)
 - Other activities in the area that might have affected groundwater quality



Individual APP Application Form (Continued)

Sample Pre-Application Meeting Agenda**Aquifer Protection Permit Pre-Application Meeting**

[facility name]

[date and time]

[meeting location/conference room]

- Introductions and Sign-in Sheet
- Purpose of meeting (ADEQ staff)
- Facility description (Applicant)
 - ▶ Location / background / history
 - ▶ Design/BADCT, operational details, expected life, etc.
 - ▶ Waste characterization
 - ▶ Overview of Existing hydrologic / geologic information – Project Setting
- Discussion of essential elements of an APP application (ADEQ staff)

<ul style="list-style-type: none"> ▶ Baseline analytical requirements (waste and groundwater) ▶ Compliance with Aquifer Water Quality Standards ▶ Establishing a point of compliance ▶ BADCT demonstration ▶ Hydrogeologic information ▶ Alert levels ▶ Discharge limitations 	<ul style="list-style-type: none"> ▶ Monitoring requirements ▶ Contingency plans ▶ Compliance schedules ▶ Temporary closure plans ▶ Closure plans ▶ Technical capability demonstration ▶ Financial demonstration ▶ Environmental enforcement actions ▶ Zoning
--	--
- Coordination with other programs (i.e AZPDES)
- Obligations of the Applicant & ADEQ under Licensing Time Frames (LTF)
 - ▶ The application process and its time frames
 - ▶ Points in the LTF process where automatic notices are generated
 - ▶ The Pre-application agreement
 - ▶ Discussion of other LTF agreements (as necessary and appropriate)
- Opportunity for scope of work / proposal for site investigations or other aspects of the project
- Determine application schedule -- application submittal date and goal for permit issuance

Exhibit A

Legal Description for Interim WWTP Property

LEGAL DESCRIPTION OF: INTERIM .24 WWTP

A PORTION OF THE NORTHEAST QUARTER (NE1/4) OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 9, TOWNSHIP 20 NORTH, RANGE 18 WEST, OF THE GILA AND SALT RIVER BASE MERIDIAN, MOHAVE COUNTY, ARIZONA, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID NORTHEAST QUARTER;

THENCE NORTH 89°39'46" WEST, ALONG THE NORTHERLY LINE OF SAID SECTION, 803.58 FEET;

THENCE DEPARTING SAID NORTHERLY LINE, SOUTH 0°00'00" EAST, 47.65 FEET TO **THE POINT OF BEGINNING;**

THENCE SOUTH 65° 16' 48" EAST, 301.25 FEET TO THE BEGINNING OF A NON-TANGENTIAL CURVE,

SAID CURVE TURNING TO THE RIGHT THROUGH 10° 28' 17", HAVING A RADIUS OF 1398.00 FEET, AND WHOSE LONG CHORD BEARS SOUTH 14° 52' 47" WEST FOR A DISTANCE OF 255.14 FEET TO THE BEGINNING OF A NON-TANGENTIAL CURVE, SAID CURVE TURNING TO THE RIGHT THROUGH AN ANGLE OF 94° 36' 17", HAVING A RADIUS OF 45.00 FEET, AND WHOSE LONG CHORD BEARS SOUTH 67° 25' 04" WEST FOR A DISTANCE OF 66.14 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENTIAL LINE.

THENCE NORTH 65° 16' 48" WEST, 300.00 FEET;

THENCE NORTH 24° 43' 12" EAST, 300.00 FEET TO **THE POINT OF BEGINNING.**

CONTAINING 98,540 SQUARE FEET MORE OR LESS.

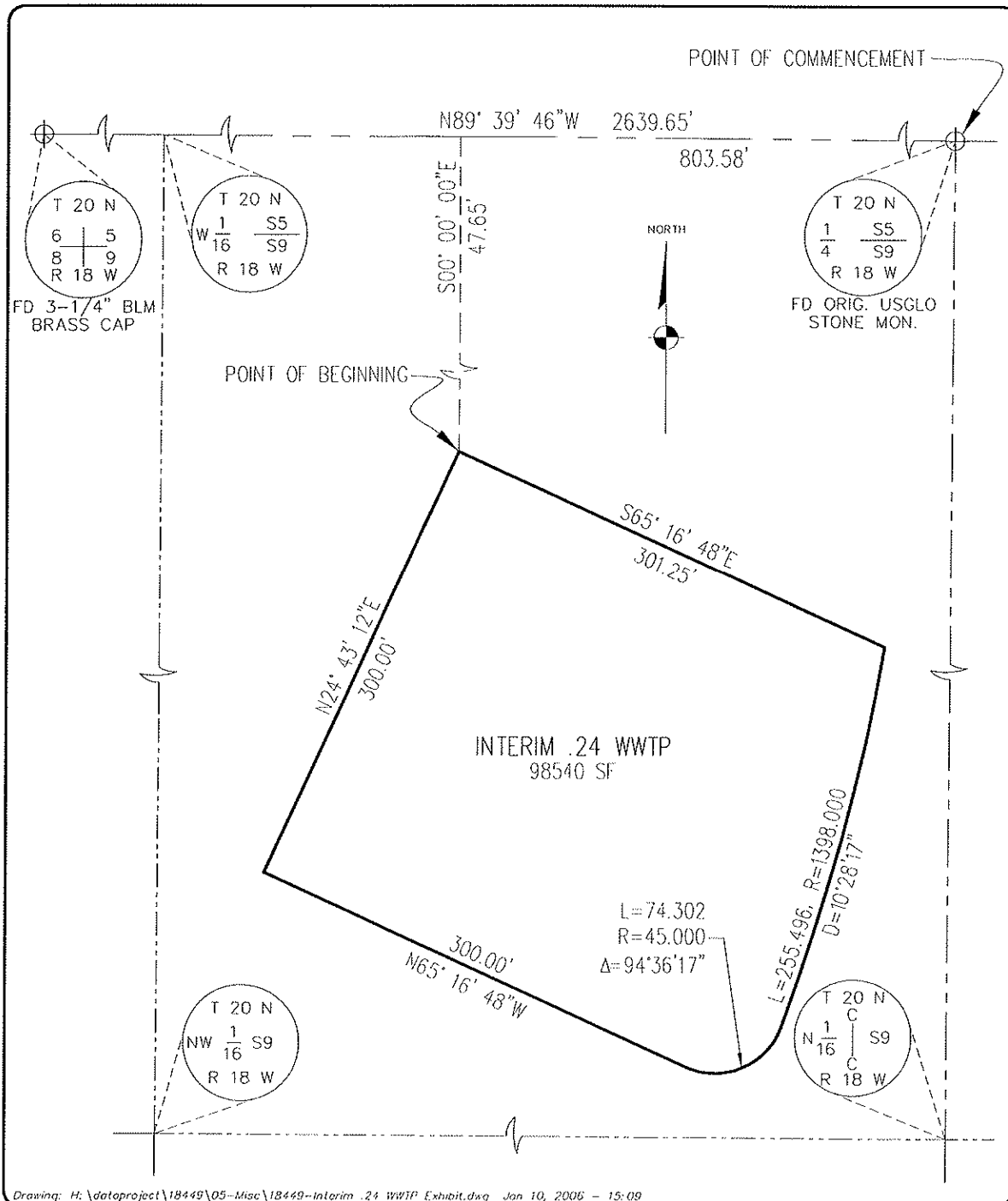
BASIS OF BEARINGS:

NORTH 00°13'38" EAST - THE WEST LINE OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 2, TOWNSHIP 20 NORTH, RANGE 18 WEST, GILA AND SALT RIVER BASE MERIDIAN, MOHAVE COUNTY, ARIZONA, AS DETERMINED BY THE ARIZONA COORDINATE SYSTEM OF 1983 (AZ83-WIF), WEST ZONE, INTERNATIONAL FOOT (IFT), UTILIZING FAST STATIC OBSERVATIONS PROCESSED BY NGS-OPUS.

M.C.S.D. "SD 32" = LATITUDE 35°09'22.70034"N,
 LONGITUDE 114°09'21.57240"W (NAD '83)
 HEIGHT 2562.46391 IFT (NAVD '88)

STONE 1/4 COR 3/2 = LATITUDE 35°08'55.53385"N,
 LONGITUDE 114°10'30.72281"W (NAD '83)
 HEIGHT 2498.20458 IFT (NAVD '88)

END OF DESCRIPTION.



Stanley Consultants INC.

5820 S. Eastern Avenue
Suite 200
Las Vegas, Nevada 89119
(702) 369-9396
Fax (702) 369-9793
www.stanleygroup.com

INTERIM .24 WWTP EXHIBIT

A PORTION OF THE NE1/4, NW1/4,
SEC. 9 T20N, R18W, G&SR BASE
MERIDIAN, MOHAVE COUNTY, AZ

SCALE: 1"=100'
PROJ. No.: 18449
DRAWN BY: TLK
CHECKED BY: TLK
DATE: 01/10/06
SHEET 1 of 1

Exhibit B

Zoning Map

EXHIBIT B – ZONING REQUIREMENTS

Section 27-A of the Mohave County Code (attached herein) states that “The following uses may be permitted in zones in which they are not specifically permitted by this ordinance, where such uses are deemed essential or desirable to the public convenience or welfare...”. Section 27-A-1 lists “public utility facilities” as an acceptable use under this provision. The section also stipulates that the site “shall be processed as a zoning use permit.”

Stanley’s interpretation of this provision indicates that the GV Ranch Interim WWTP site falls under this category of Special Use. The site is currently zoned A-R, but will be rezoned for MDR upon submission of the zoning application. To apply for the zoning application, approval of the 208 Plan amendment is required. On behalf of Rhodes, Stanley is preparing the zoning application and will submit it as soon as the 208 Plan amendment has been approved. In the meantime, it is our understanding that by rule a wastewater treatment facility can be placed on this parcel as zoned.

Section 27 GENERAL PROVISIONS

A Special Uses The following uses may be permitted in zones in which they are not specifically permitted by this Ordinance, where such uses are deemed essential or desirable to the public convenience or welfare, and are in harmony with the various elements or objectives of the General Plan

In each instance, the matter shall be processed as a Zoning Use Permit.

- 1 Airports or aircraft landing fields, public or private institutions, public utility facilities, and communications installations, and public and private sanitary landfills
- 2 Cemeteries, columbariums, crematories and mausoleums
- 3 Establishments of temporary or permanent enterprises involving large assemblages of people or automobiles, including amusement parks, circuses, fairsgrounds, open-air theaters, race tracks, and recreational centers
- 4 Layout and construction of model homes and their use as sales office in an approved subdivision prior to Final Plat Recordation
- 5 General Commercial uses that are permitted without a Zoning Use Permit for the older mining communities of Outman and Chloride when the General Commercial Uses will support tourist activities and are within established commercial areas.

B Building Sites

- 1 Any lot or parcel of land under one (1) ownership and of record and where no contiguous land is owned, or was owned by the same person on the effective date of this Ordinance, may be used as a building site, even when of less area or width than that required by the regulations for the zone in which it is located, but each building site must meet any requirements for the County Department and Ordinances as regards sanitation needs
- 2 Any water tower or other structure, where a large weight would be supported by supports, legs, or structural walls, shall be so located that, if it should collapse, its resulting length would still be contained on the property on which it was constructed.
- 3 If more than one (1) lot, a portion of a lot, or portions of lots are used as a building site, setbacks will be considered for the combined area as a "lot" for the use approved thereon as long as it qualifies as a building site
- 4 Only one (1) single family dwelling may be established on any one- (1) lot or building site. Two (2) or more mobile or manufactured homes that were manufactured as separate single family dwellings shall not be permitted as one (1) single family residence regardless of modifications proposed. Only those units originally manufactured to be transported in sections and connected on site shall be permitted as a single-family dwelling
- 5 Windmills, which are not in conjunction with agricultural uses, may exceed the height restrictions imposed by the various zoning classifications provided that the windmill is located on the property in a manner so that if the structure should section collapse, the resulting length of the windmill would still be contained on the property on which it was constructed

App 1

Mohave County Planning and Zoning Commission
P O Box 7000
Kingman Arizona 86402-7000

APPLICATION FOR A REZONE

Dear Sir:

I (We) RHODES HOMES ARIZONA hereby request the rezoning of:

(legal description of subject property)
Assessor's Parcel Number (APN) 215-16-005 215-01-075
From: A-R Proposed to be: SD - PAD
(Current Zoning) (Proposed Zoning)

For the purpose of: A SINGLE FAMILY RESIDENTIAL COMMUNITY WITH UNIQUE DEVELOPMENT STANDARDS
(Proposed use of Property)
and request that the Board of Supervisors set this matter for public hearing following evaluation by the Planning and Zoning Commission

Present use of property: VACANT Zoning A-R
Owner: (proof required*) AMERICAN LAND MANAGEMENT LLC, SOUTH DAKOTA LLC
Owner: (address) 6101 S. MUSTANG CIRCLE, SIOUX FALLS, SD 51708
Phone: _____

Property owner concurs: Charles Sak
(Owner's Signature Required)

SUBMIT TEN (10) COPIES OF 8 1/2 X 11 SITE PLAN AND DRAWING WITH TEN (10) COPIES OF THIS FORM

(TO BE FILLED IN IF OWNER AND APPLICANT DIFFERENT)

Applicant's interest in the property: DEVELOPER

Applicant: RHODES HOMES AZ c/o STANLEY CONSULTANTS

Address: ATTENTION: LORA DREJA, 3001 S. STOCKTON HILL ROAD #3

City: KINGMAN State: AZ Zip: 86401 Phone: (702) 765-6342

*ONE (1) PROOF OF OWNERSHIP: Recorded Warranty or Joint Tenancy Deed; a Quit Claim Deed is not acceptable

Date submitted: _____ Received by: _____
Fee: _____ Receipt No: _____
Ten (10) Copies Received: _____
Application: _____ Other: _____ Sketch: _____



SARALYN ROSENLUND
Notary Public - Nevada
No 02-76733-1
My Appt Exp July 11, 2006

Saralyn Rosenlund

App2

Mohave County Planning and Zoning Commission
P.O. Box 7000
Kingman Arizona 86402-7000

APPLICATION FOR A REZONE

Dear Sir:

I (We) RHODES HOMES ARIZONA hereby request the rezoning of:

(legal description of subject property)
Assessor's Parcel Number (APN) 215-01-092 AND 215-01-010
From: A-R Proposed to be: SD - PAD
(Current Zoning) (Proposed Zoning)

For the purpose of: A SINGLE FAMILY RESIDENTIAL COMMUNITY WITH UNIQUE DEVELOPMENT STANDARDS
(Proposed use of Property)
and request that the Board of Supervisors set this matter for public hearing following evaluation by the Planning and Zoning Commission.

Present use of property: VACANT Zoning A-R
Owner: (proof required*) AMERICAN LAND MANAGEMENT LLC, SOUTH DAKOTA LLC
Owner: (address) 6101 S. MUSTANG CIRCLE, SIOUX FALLS, SD 57108
Phone: _____

Property owner concurs: _____

(Owner's Signature Required)

SUBMIT TEN (10) COPIES OF 8 1/2 X 11 SITE PLAN AND DRAWING WITH
TEN (10) COPIES OF THIS FORM

(TO BE FILLED IN IF OWNER AND APPLICANT DIFFERENT)

Applicant's interest in the property DEVELOPER

Applicant: RHODES HOMES AZ c/o STANLEY CONSULTANTS

Address: ATTENTION: LORA DREJA, 3001 S. STOCKTON HILL ROAD #3

City: KINGMAN State: AZ Zip 86401 Phone: (702) 765-6342

*ONE (1) PROOF OF OWNERSHIP: Recorded Warranty or Joint Tenancy Deed; a Quit Claim Deed is not acceptable.

Date submitted _____ Received by: _____
Fee _____ Receipt No: _____
Ten (10) Copies Received: _____
Application: _____ Other: _____ Sketch: _____



SARALYN ROSENLUND
Notary Public - Nevada
No. 02-76733-1
My App. Exp. July 11, 2006

[Signature]

Exhibit C

Area Topographic and Hydrogeologic Data Map



January 30, 2006

Ms. Sujana Attaluri
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, Az. 85007

Re: Golden Valley Ranch Interim WWTP
APP Application – Verification of Adjacent Parcel Development Status

Dear Ms. Attaluri:

Per Section R18-9-A202-A2 of the Arizona Administrative Code as pertains to the Aquifer Protection Permit, ADEQ must be notified of the development status of any parcel of land adjacent to a wastewater treatment plant (WWTP). This letter will serve to provide you with this status.

The parcel of land chosen for the Golden Valley Ranch Interim WWTP (GVR Interim WWTP) is located at the northwest corner of Hualapai Road and Road A, which is outside of the limits of the Phase 1 development of Golden Valley Ranch. This parcel has not been dedicated or platted for a specific use at this point in time. The current land use plan indicates that a park will be placed on this parcel and that the park will extend beyond the limits of the GVR Interim WWTP.

Rhodes Homes hereby commits that the park property, inclusive of the GVR Interim WWTP, will not be developed as such until the GVR Interim WWTP has been decommissioned and removed from the site. Once this has occurred, any land ownership rights afforded the GVR interim WWTP will be returned to the owner of the park property.

Properties adjacent to the park on all sides, save for the southeast corner, are scheduled for residential development. All residential parcels adjacent to the park are scheduled for development after the plant is to be decommissioned and removed from service. Rhodes Homes hereby commits to maintaining ownership of these parcels until the GVR interim WWTP is decommissioned and removed from the site.

The property southeast of the GVR Interim WWTP is occupied by the community's golf course. There are no specific restrictions on the use of the property even if it is adjacent to a WWTP, so development of the golf course will continue during the useful life of the WWTP. In fact, the golf course is a vital element of the WWTP, as the WWTP effluent will be used to help water the golf course.

If you have any questions, please call me at 928-718-2210. Thank you for your attention.

Sincerely,

Kirk Brynjulson

A handwritten signature in black ink, appearing to read 'Kirk Brynjulson', written over the printed name.

Exhibit D

Facility Site Plan

Exhibit E

Design Report

Golden Valley Ranch

Design Report

**0.24 MGD Interim Wastewater
Treatment Plant**

Rhodes Homes Arizona, Inc.
Kingman, Arizona

January 12, 2006



Stanley Consultants INC.

A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

Respectfully submitted,

Stanley Consultants, Inc.

Prepared for

Rhodes Homes Arizona, Inc.

Prepared by

Stanley Consultants, Inc

Approved by

Mohave County - Environmental Services Department

Approved by

Arizona Department of Environmental Quality

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Executive Summary

Golden Valley Ranch is a master planned development by Rhodes Homes Arizona (Rhodes) located in Golden Valley, Arizona approximately 5 miles west of Kingman. The development is not adjacent to, or integral with, any wastewater service areas at this time. Full wastewater collection and treatment to Class A+ standards are required to meet the development objectives of reusing the wastewater for golf course irrigation, with secondary discharge to Thirteen Mile Wash.

To achieve this objective, Rhodes has retained Stanley Consultants to prepare a design report for the wastewater treatment plant (WWTP). The report reviews the background of the development, provides an overview of wastewater treatment in general, and then defines the specifics of treatment for Golden Valley Ranch. The Design Report recommends the following interim treatment plant process:

1. Influent pump station, with flow coming from a diversion manhole in the public right-of-way such that when the interim plant is taken out of service, the flow can be diverted away from the interim plant and towards the permanent plant.
2. Mechanical screen with manual screen bypass.
3. Grit removal.
4. Biological treatment basins.
5. Membrane bioreactor basin.
6. UV disinfection.
7. Discharge to golf course lake, with AZPDES discharge location when golf course lake is at capacity.
8. Solids handling via truck transport to landfill.
9. No odor control (WWTP located outside of 500' buffer zone).
10. Autodialer communications, with alarms sent to emergency response operator and limited remote control (pump on/off, blower on/off) possible.
11. Backup power generator.

Section 1

Introduction

1.1 Project Background

Golden Valley Ranch is a mixed use, master planned development located on approximately 9 square miles of property in Golden Valley, Arizona, west of Kingman (see Figure 1.1). To date, development in Golden Valley has zoning restricted to 1 house per acre with a commercial strip along Arizona State Route 68; thus, sewer treatment in the area consists of on-site septic systems, with no centralized collection and treatment system in place. The planned housing densities of Golden Valley Ranch mandate that a sewage collection and treatment system be constructed to meet the needs of the development. In an effort to meet this need while expediting the pace of the development, Rhodes Homes Arizona is proposing to construct an interim wastewater treatment plant (WWTP) to service the first phase of development (800 residential units). By the time these units are constructed, Rhodes will have a permanent WWTP constructed and ready for operation. The permanent WWTP will be at a different location from the interim WWTP, so the interim WWTP is being constructed in such a way that all components possible can be removed from service and relocated to another site. Both plants will provide A+ quality wastewater effluent.

Rhodes Homes has indicated that this development will be a “destination development”, including amenities such as a golf course, parks and open space, and sufficient commercial development to make the development a “live, shop and play” development. This dynamic works into the wastewater reuse plan for the development, as Rhodes Homes has determined that the effluent from both the temporary and permanent WWTPs will be used to water the golf course.

1.2 Local Area Conditions

The site consists of approximately 5,760 acres of undeveloped land located approximately 5 miles west of the western border of the City of Kingman, in Mohave County, Arizona (Figure 1.1). Table 1.1 (pg. 3) gives a description of the parcels.